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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,710	12/13/2001	Aarne Heino	111389	1310

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EXAMINER

MCCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-9

Office Action Summary

Application No.

09/980,710

Applicant(s)

HEINO, AARNE

Examiner

Sanza L McClendon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claims 8 and 18 are objected to because of the following informalities: Claims 8 and 18 are the same claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sjoberg et al (US 6,106,761).

Sjoberg et al teaches methods of heating and/or crosslinking of polymers. Said method comprises irradiating said polymer material with infrared radiation, which is not substantially equal to the absorption peaks

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of the polymer material. Said polymer materials according to the invention can be polyethylene and an organic peroxide or azo compound as a crosslinker. Sjoberg et al teaches irradiating of the polymer with IR radiation having wavelengths that differ from the wavelengths for which the polymer has absorption peaks, which will provide uniform heating of the polymer material across the entire thickness and said heating is sufficient enough to crosslink (i.e. activate said peroxide to initiate said crosslinking reaction) the polymer material without the deleterious effects of the polymer material. The elimination of said absorption peaks can be achieved by placing a filter between the IR source and the polymer material. The examiner is contending that said peroxide and azo compounds anticipate applicant's claims 2-3 and 9-10 because peroxide is a well-known chemical foaming agent.

Sjoberg et al teaches said method is useful in lining of pipes, therefore the examiner deems that said method could inherently be used in the manufacture of coating/insulating cables in the absence of evidence to the contrary.

4. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sjoberg et al (WO 97/10936).

Sjoberg et al teaches methods of heating and/or crosslinking of polymers. Said method comprises irradiating said polymer material with infrared radiation, which is not substantially equal to the absorption peaks of the polymer material. Said polymer materials according to the invention can be polyethylene and an organic peroxide or azo compound as a crosslinker. Sjoberg et al teaches irradiating of the polymer with IR radiation having wavelengths that differ from the wavelengths for which the polymer has absorption peaks, which will provide uniform heating of the polymer material across the entire thickness and said heating is sufficient enough to crosslink (i.e. activate said peroxide to initiate said crosslinking reaction) the polymer material without the deleterious effects of the polymer material. The elimination of said absorption peaks can be achieved by placing a filter between the IR source and the polymer material. The examiner is contending that said peroxide and azo compounds anticipate applicant's claims 2-3 and 9-10 because peroxide is a well-known chemical foaming agent. Said IR radiation can be used from sources such as those listed in column 9, lines 34-41.

Sjoberg et al teaches said method is useful in lining of pipes, therefore the examiner deems that said method could inherently be used in the manufacture of coating/insulating cables in the absence of evidence to the contrary.

Claim Rejections - 35 USC § 102/35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4-6, and 10-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Seaborne (GB 2 283 489 A).

Seaborne et al teaches infrared curing of resins, resin systems, and other catalyzed systems. Seaborne et al teaches irradiating resin/resin systems with infrared radiation that is emitted in a band having its peak at the peak frequency of the emission/absorption band of the curing reaction for the said resin or resin system. Seaborne, further teaches an apparatus that provides infrared emissions with peak intensity at the frequency of the emissions/absorptions band characteristic of the curing reaction. Said apparatus provided radiation in the form of heat at the temperature corresponding to the peak frequency characteristic of the spectrum of the curing reaction of a particular resin system. Per example, Seaborne teaches irradiating an epoxy/amine system with radiation emitted at the corresponding frequency during the curing reaction, and conversely, absorptions of radiation at said frequency by the resin/resin system is at the temperature where radicals are formed when the catalyst (amine) absorbs a particular amount of energy, which is provided by a particular wavelength of IR radiation. Said heating takes place in an oven with controllable electrical

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elements or with catalytic gas burners, wherein Said heat sources emit energy on a relatively low band of IR spectrum. Seaborne does not expressly teach that the IR radiation only optimally penetrates that polymer material, however Seaborne et al teaches said method makes it possible to reduce the amounts of catalyst and/or using less aggressive catalyst to promote curing of the resin system, which helps to reduce scorch-damage due to excessive heating. The motivation would have been to reduce surface damage to the cured resin coating in the absence of evidence or arguments to the contrary. In the alternative, because Seaborne teaches reduction in scorch damage to the resin/resin system, it is deemed that the IR radiation source only penetrates the polymer material, while being absorbed by catalyst/catalyst reaction. Said reduction in scorch damage provides proof that the polymer (resin system) is not being deformed by excessive heat due the absorption of heat from the radiation source.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (703) 305-0505. The examiner can normally be reached on Monday through Friday 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0657.

Sanza L McClendon

Examiner

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SMc

April 30, 2003

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Supervisory Patent Examiner
Technology Center 1700